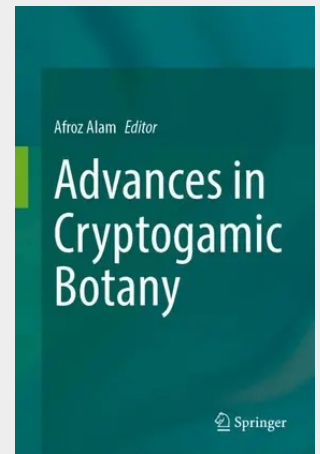


Advances in Cryptogamic Botany

This book explores the often-overlooked world of cryptogams—algae, bryophytes, lichens, fungi, and pteridophytes. These groups play essential roles in ecosystems, from nutrient cycling and climate regulation to pollution monitoring and sustainable agriculture. The book is divided into six thematic sections. It begins with algae, covering their diversity, systematics, and applications in biotechnology. The next section focuses on bryophytes, highlighting their ecological roles, distribution, and importance in conservation and climate studies. Lichens are explored in terms of their adaptations, genomic insights, and use as environmental indicators. The fungi section discusses taxonomy, ecological functions, and their role in agriculture and soil health. Pteridophytes are examined for their evolutionary traits, ecological adaptations, and economic uses. The final sections introduce modern tools and techniques—such as genomics, remote sensing, and conservation frameworks—and conclude with future directions, including the impact of climate change and opportunities in cryptogamic research and education. This book is a valuable resource for students, researchers, educators, and professionals in botany, ecology, environmental science, and biotechnology. It offers updated knowledge and practical insights into the study and application of cryptogams in both natural and managed ecosystems.

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